Project Baseline Bathymetry for ODMDS E

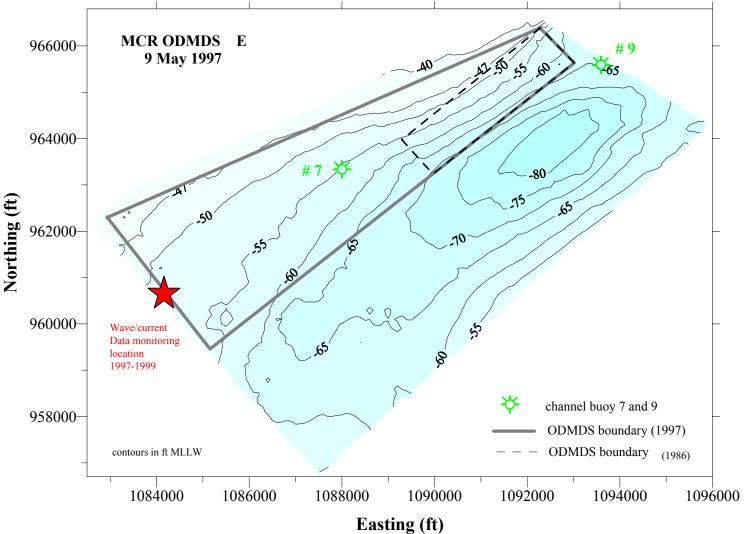


Figure F1. Baseline bathymetry condition of the Shallow Water ODMDS (ODMDS E). Assessment of potential impacts arising from the use of the SW ODMDS is performed with respect to the baseline condition.

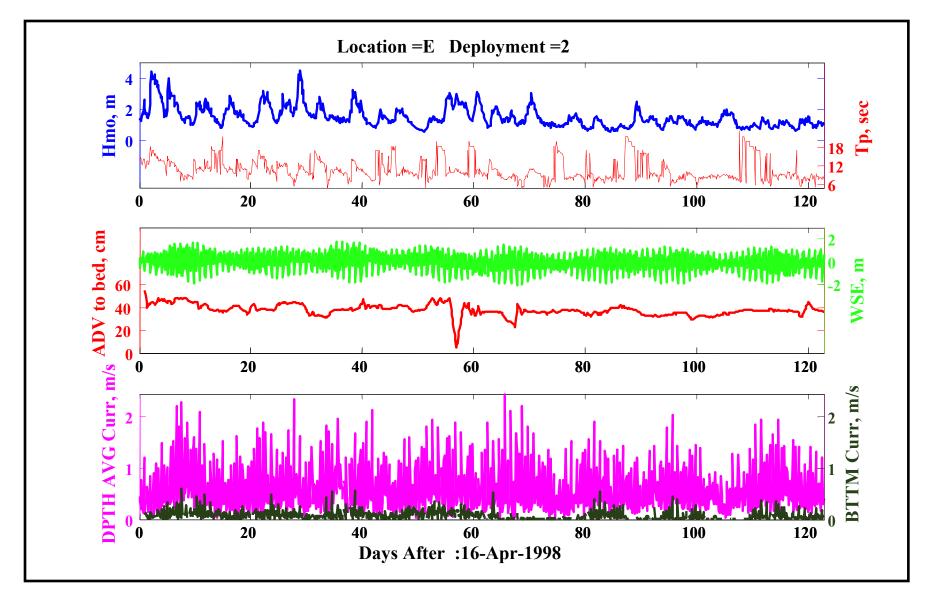


Figure F2. Summary of the oceanographic data measured 16 April - 20 August 1998 at western boundary of SW ODMDS. Data was used in the MDFATE model to simulate dredged material behavior during placement at the SW ODMDS for each of 3 disposal scenarios. Pertinent data included wave height and period (top graph), tide (green line, middle graph), and depth-averaged current (purple line, bottom graph).

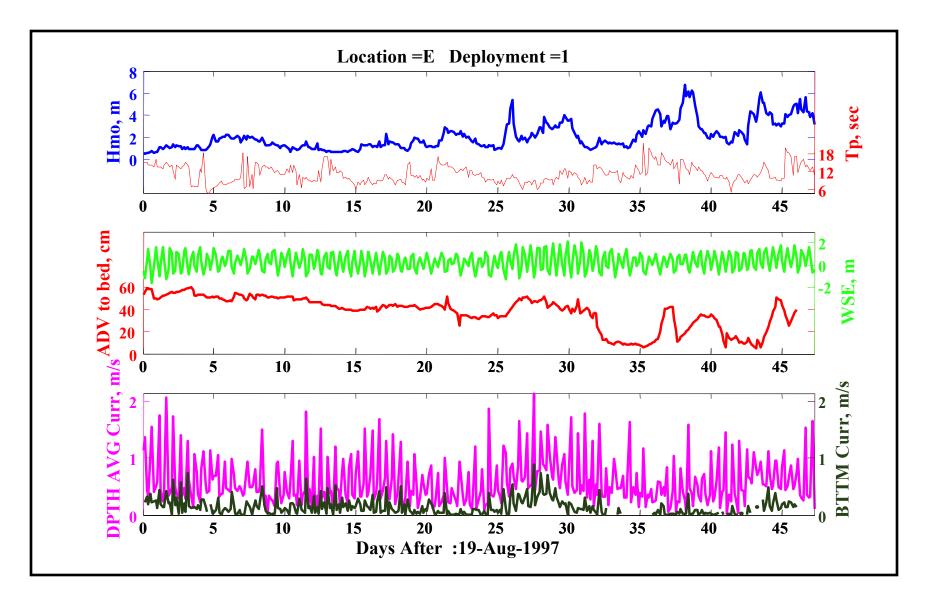


Figure F3. Summary of the oceanographic data measured 19 August - 10 October 1997 at western boundary of SW ODMDS. Data was used in the MDFATE model to simulate dredged material behavior during placement at the SW ODMDS for each of 3 disposal scenarios. Pertinent data included wave height and period (top graph), tide (green line, middle graph), and depth-averaged current (purple line, bottom graph).

Depth Averged Current at Shallow Water ODMDS

April-August 1998 & August- October 1997

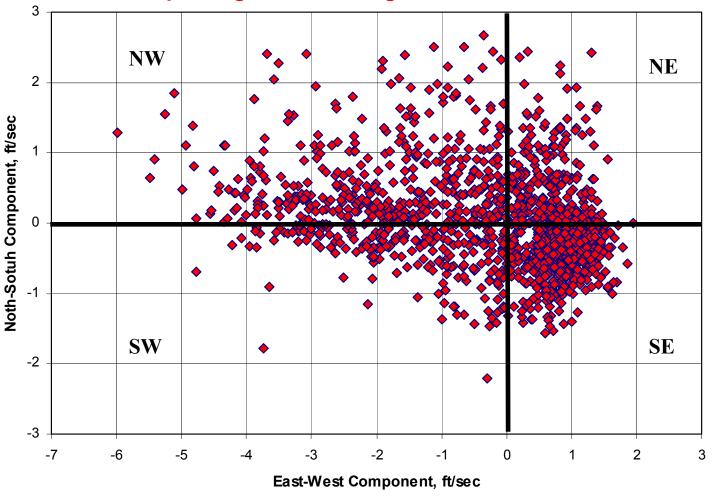


Figure F4. Directional plot of depth averaged current observed at western boundary of SW ODMDS during April-August 1998 and August-October 1997. Each "dot" corresponds to a single observation, recorded every 3 hours. Note that the dominate strength of current is toward the NW, but for much of the time, the current is set weakly toward the SE.

MCR Shallow Water ODMDS
Grid used to Guide Simulated Dredged Material Placement

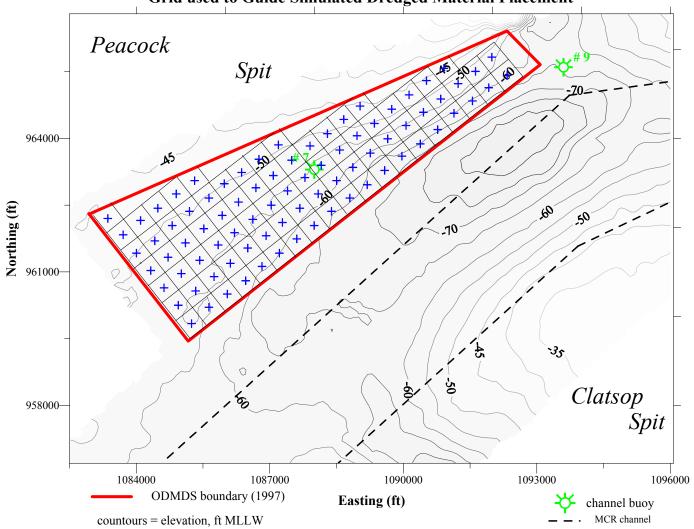


Figure F5. Cell geometry used to control the placement of dredged material within the Shallow Water ODMDS, for MDFATE simulations. The centroid for each 500 ft x 500 ft cell is shown as a blue cross; there are 83 cells.

MCR Shallow Water ODMDS
Distribution of Simulated Dredged Material Placement: 2 Mcy scenario

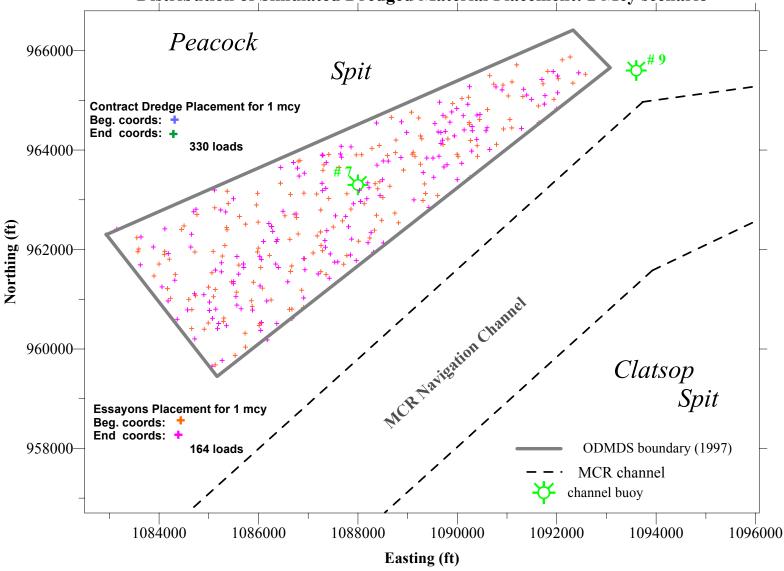
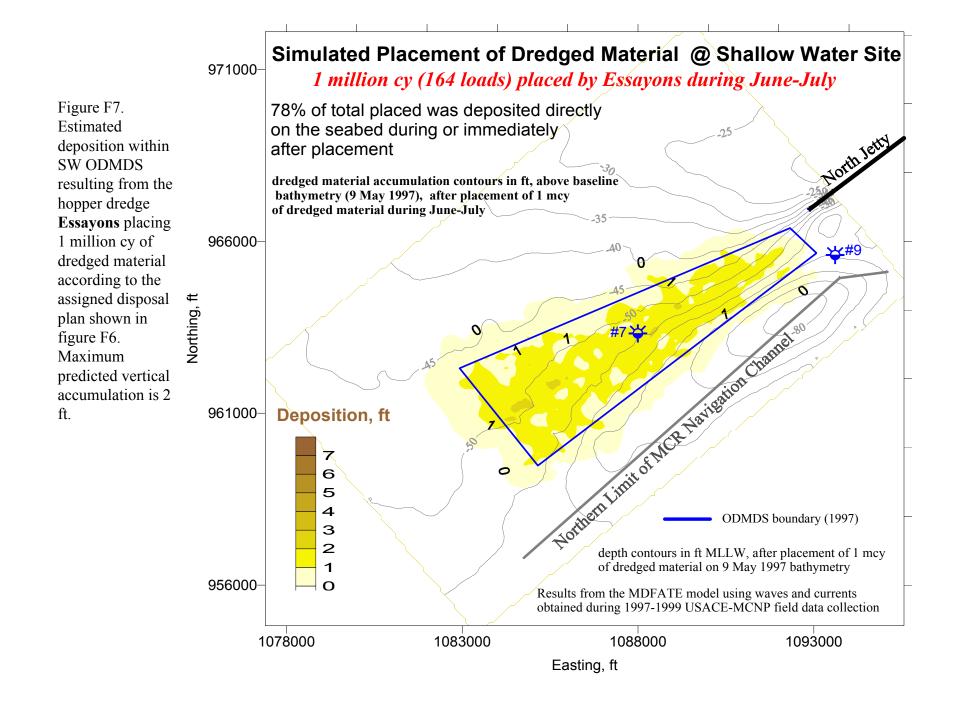


Figure F6. Uniformly distributed dredged material placement locations for the hopper dredge **Essayons** to place 1 million cy in the SW ODMDS, using the grid shown in figure F5. The release points for 2 dumps were assigned per cell.



MCR Shallow Water ODMDS
Distribution of Simulated Dredged Material Placement: 2 Mcy scenario

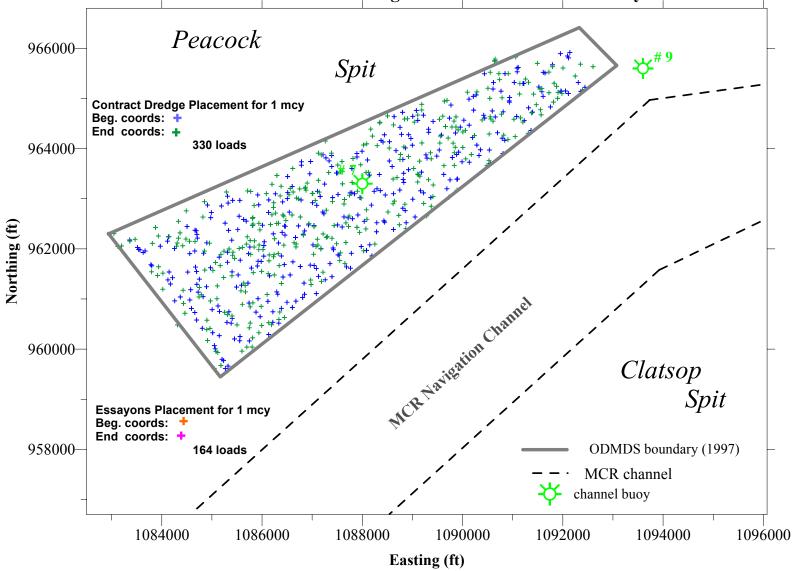


Figure F8. Uniformly distributed dredged material placement locations for the **Contract** hopper dredge to place 1 million cy in the SW ODMDS, using the grid shown in figure F5. The release points for 4 dumps were assigned per cell.

Simulated Placement of Dredged Material @ Shallow Water Site Figure F9. Estimated 971000 1 million cy (164 loads) placed by Essayons during June-July cumulative deposition 1 million cy (330 loads) placed by Contract Dredge during July-Oct within SW ODMDS 79% of total placed was deposited directly resulting from the on the seabed during or immediately Contract dredge after placement placing 1 million cy of dredged material accumulation contours in ft, above baseline dredged material bathymetry (9 May 1997), after placement of 2 mcy according to the of dredged material during June-October assigned disposal plan E shown in figure F8, on 966000top of the 1 million cy placed by the dredge Essayons. Maximum predicted vertical accumulation is 3 ft. Proposed purple outer boundary is needed to account for dredged Deposition, ft material accumulation 961000 during active disposal; Northern Limit of ... 7 extends 500 ft beyond 6 existing southern Ε' 5 boundary and 1,500 ft 4 ODMDS boundary (1997) beyond existing western, northern 3 Propsoed SW ODMDS boundary (2003) boundary. 2 depth contours in ft MLLW, after placement of 2 mcv 1 of dredged material on 9 May 1997 bathymetry 956000-O Results from the MDFATE model using waves and currents obtained during 1997-1999 USACE-MCNP field data collection 1088000 1078000 1083000 1093000

Easting, ft

MCR Shallow Water ODMDS
Distribution of Simulated Dredged Material Placement: 4 Mcy scenario

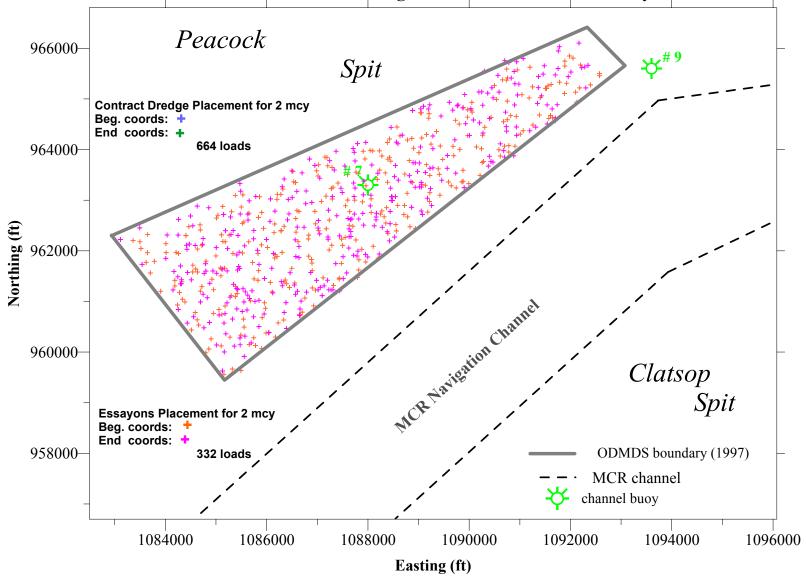
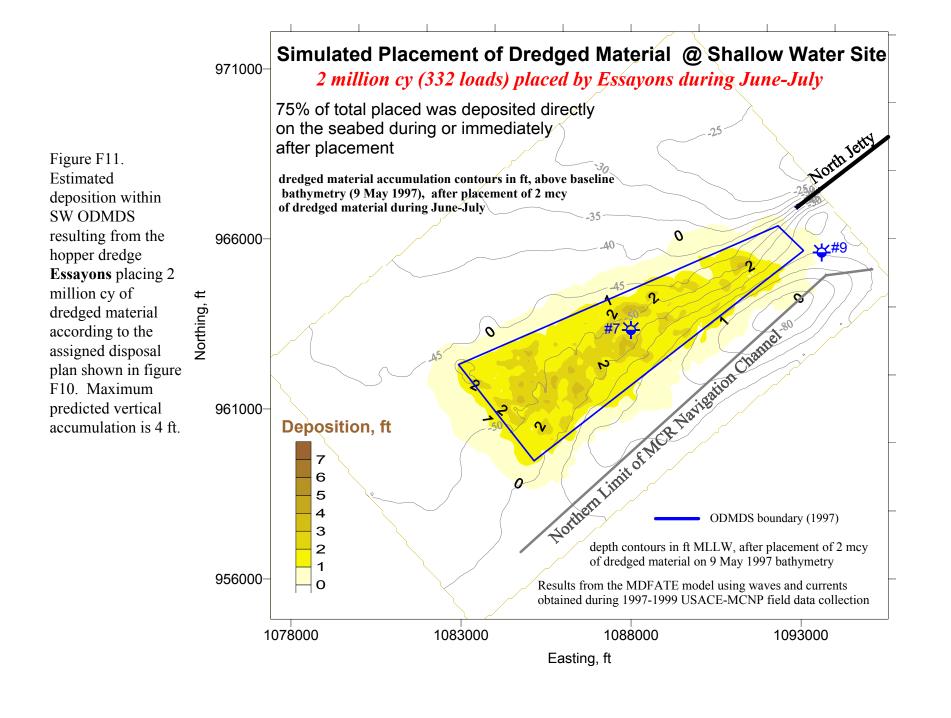


Figure F10. Uniformly distributed dredged material placement locations for the hopper dredge **Essayons** to place 2 million cy in the SW ODMDS, using the grid shown in figure F5. The release points for 4 dumps were assigned per cell.



MCR Shallow Water ODMDS
Distribution of Simulated Dredged Material Placement: 4 Mcy scenario

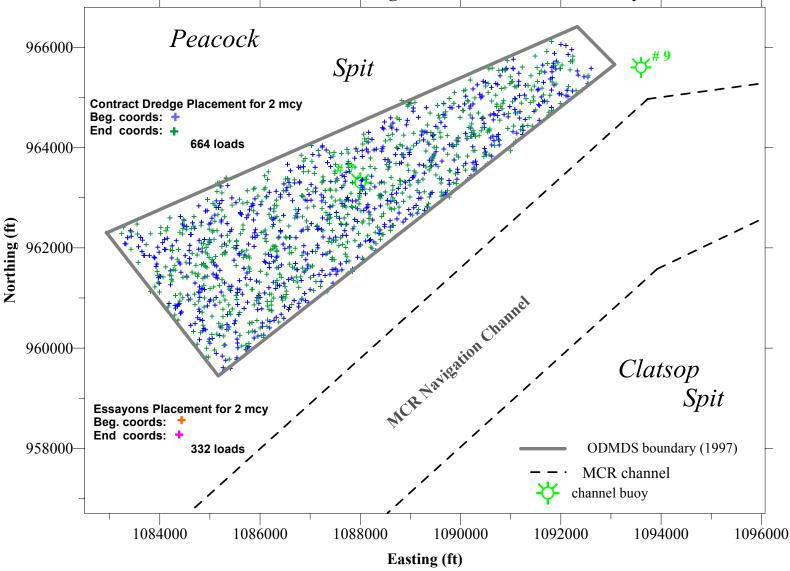
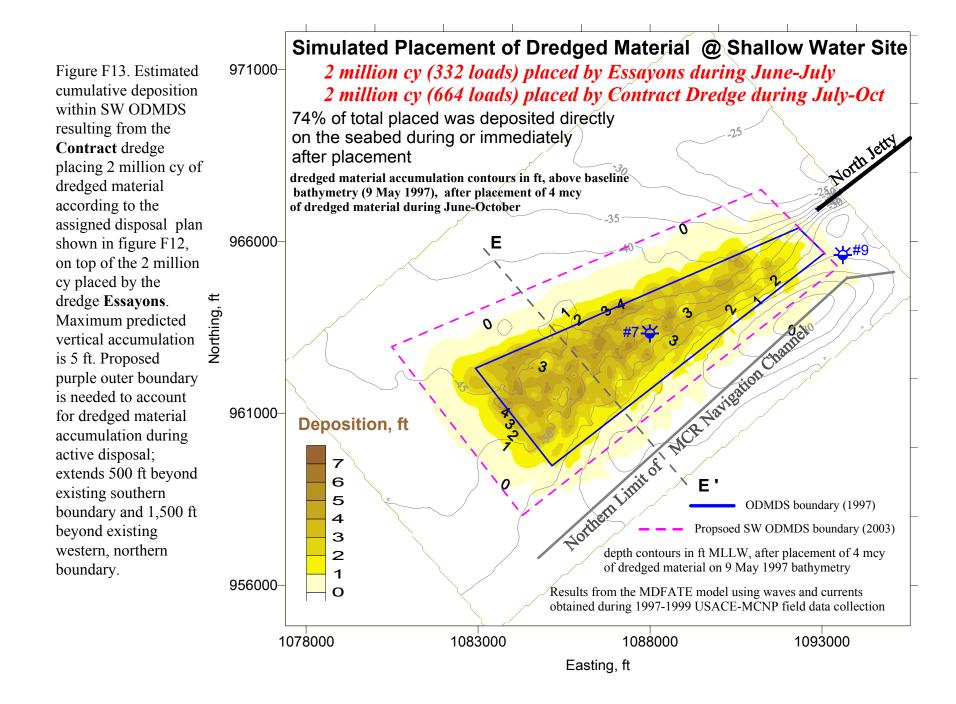


Figure F12. Uniformly distributed dredged material placement locations for the **Contract** hopper dredge to place 2 million cy in the SW ODMDS, using the grid shown in figure F5. The release points for 8 dumps were assigned per cell.



MCR Shallow Water ODMDS
Distribution of Simulated Dredged Material Placement: 6 Mcy scenario

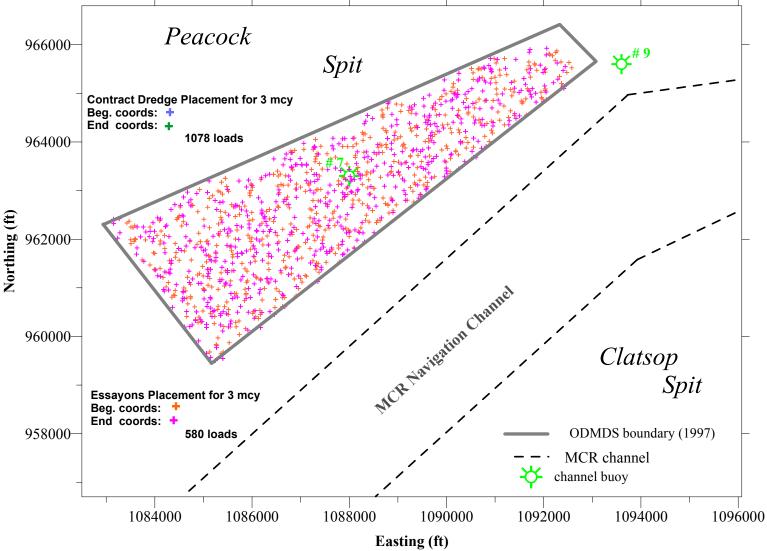
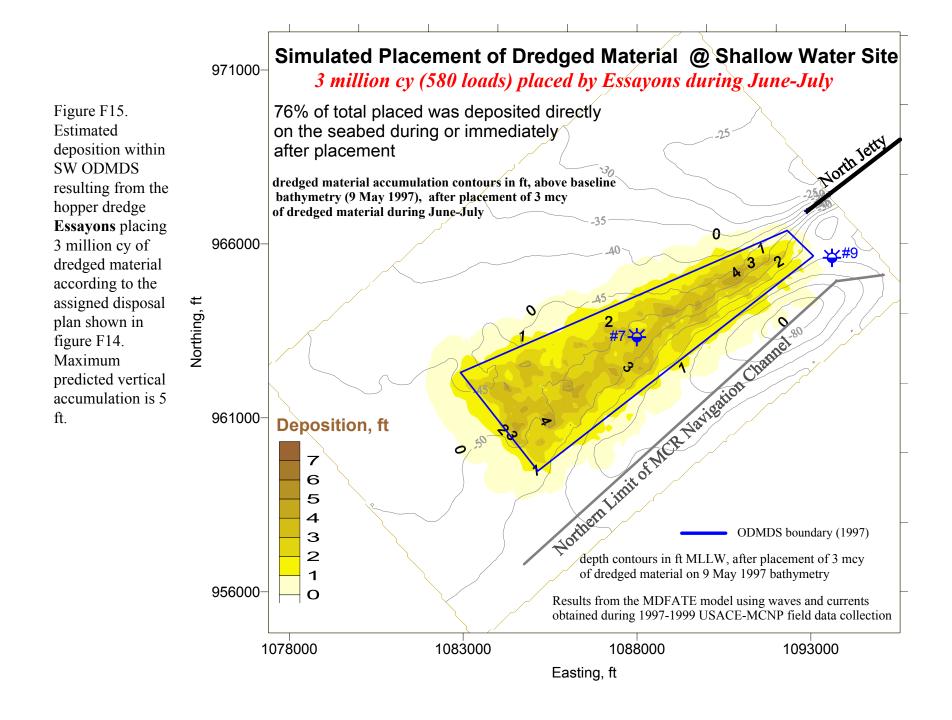


Figure F14. Uniformly distributed dredged material placement locations for the hopper dredge **Essayons** to place3 million cy in the SW ODMDS, using the grid shown in figure F5. The release points for 7 dumps were assigned per cell.



MCR Shallow Water ODMDS
Distribution of Simulated Dredged Material Placement: 6 Mcy scenario

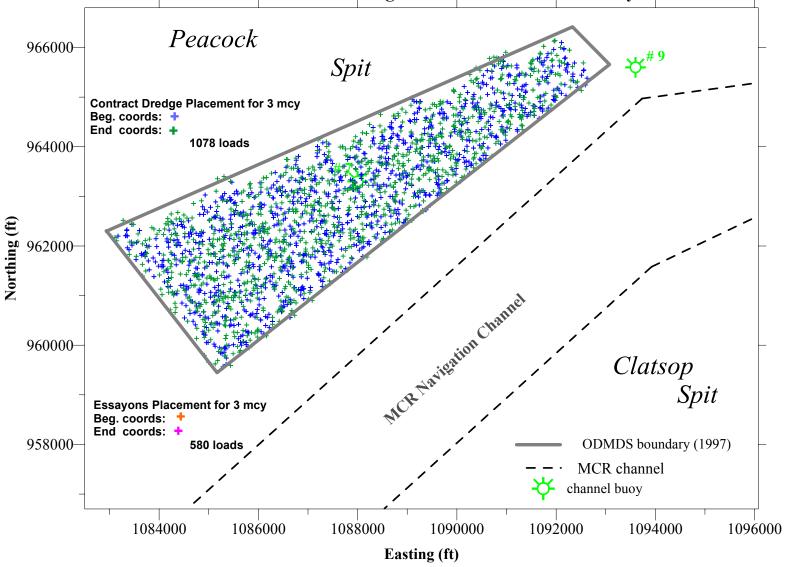
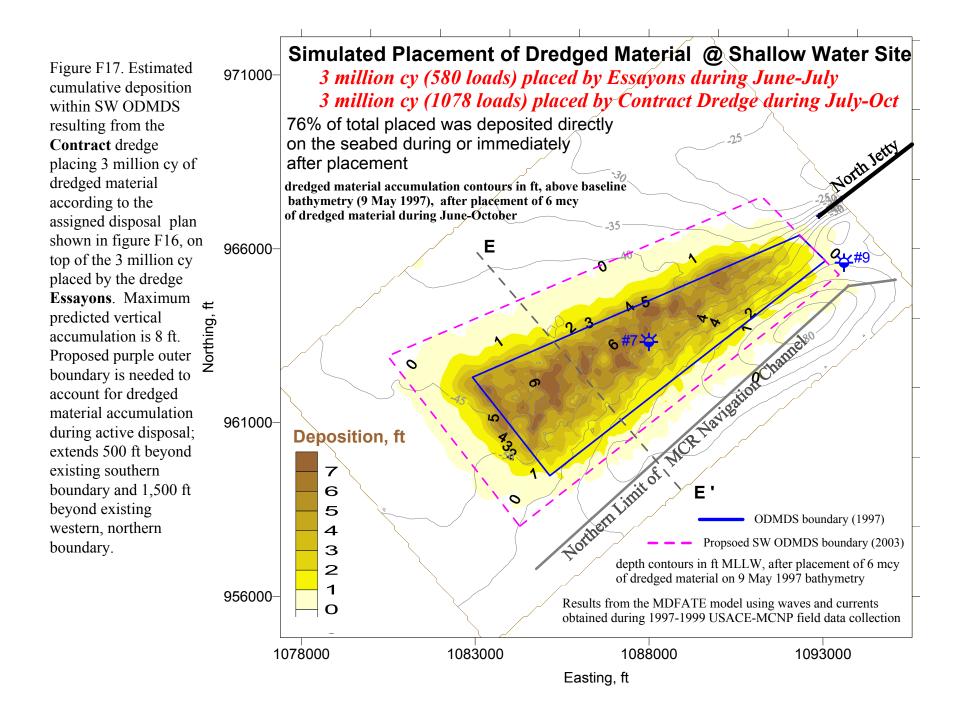


Figure F16. Uniformly distributed dredged material placement locations for the **Contract** hopper dredge to place 3 million cy in the SW ODMDS, using the grid shown in figure F5. The release points for 13 dumps were assigned per cell.



Cross-Section Through Shallow Water ODMDS Section E-E'

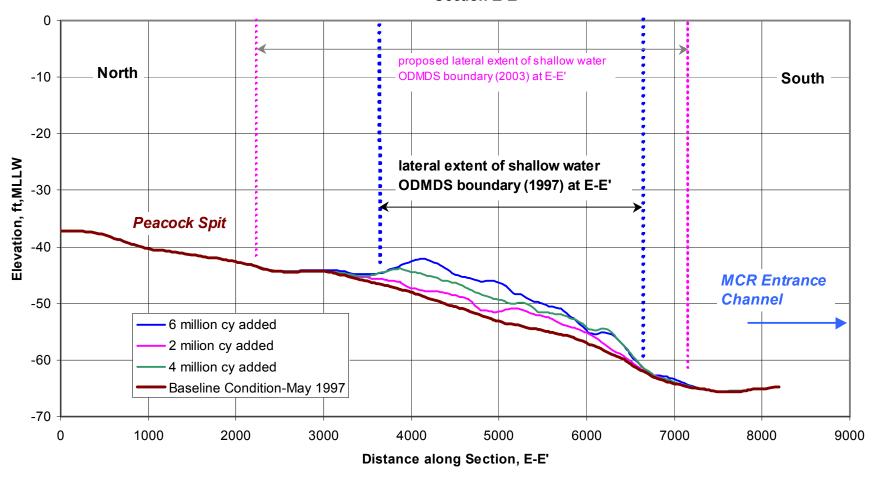


Figure F18. Cross-section though SW ODMDS, as shown in figs F9, F13, & F17; view is toward shore. Baseline bathymtry is shown with predicted results for placed dredged material accumulation for 3 disposal scenarios.

Volume of Dredged Material Not Deposited on Seabed During 2 MCY Placement at Shallow Water Site

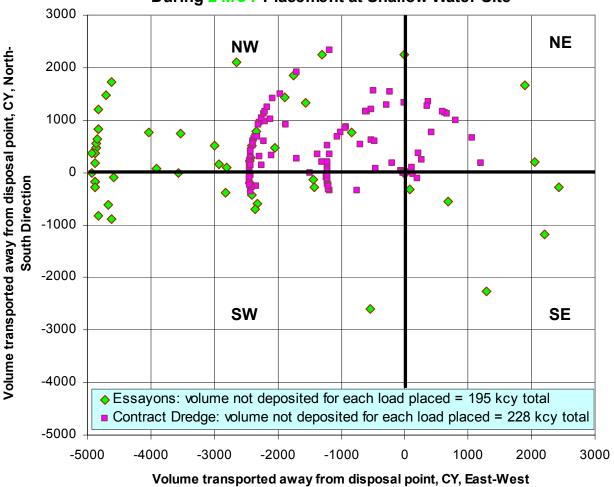


Figure F19. Directional plot showing the spatial distribution of dredged material (volume) carried out of SW ODMDS by currents, during disposal from a hopper dredge for the **2 million cy placement scenario**. Note that very little placed dredged material is carried toward the south (toward the navigation channel). Each "dot" indicates the volume/direction of material transported out of the SWS during a given disposal cycle.

Volume of Dredged Material Not Deposited on Seabed During 4 MCY Placement at Shallow Water Site 3000 NE NW Volume transported away from disposal point, CY, North-2000 1000 8 **South Direction** -1000 -2000 **\rightarrow** SW SE -3000 -4000 ♦ Essayons: volume not deposited for each load placed = 448 kcy total ■ Contract Dredge: volume not deposited for each load placed = 428 kcy total

Figure F20. Directional plot showing the spatial distribution of dredged material (volume) carried out of SW ODMDS by currents, during disposal from a hopper dredge for the **4 million cy placement scenario**. Note that very little placed dredged material is carried toward the south (toward the navigation channel). Each "dot" indicates the volume/direction of material transported out of the SWS during a given disposal cycle.

-1000

Volume transported away from disposal point, CY, East-West

1000

2000

3000

0

-5000

-5000

-4000

-3000

-2000

Volume of Dredged Material Not Deposited on Seabed During 6 MCY Placement at Shallow Water Site

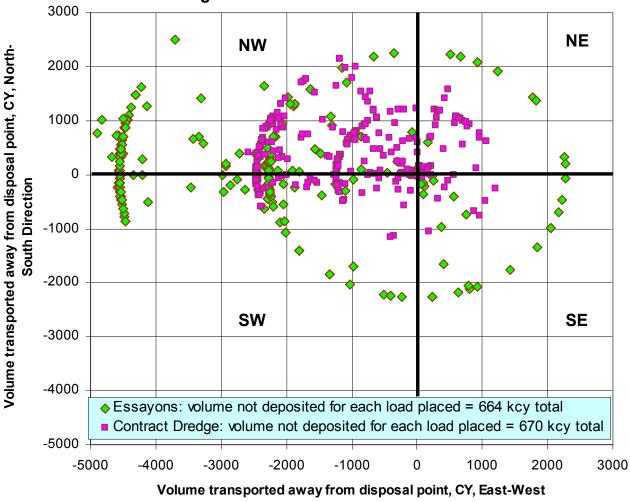


Figure F21. Spatial distribution of dredged material (volume) carried out of SW ODMDS by currents, during disposal from a hopper dredge for the **6 million cy placement scenario**. Note that very little placed dredged material is carried toward the south (toward the navigation channel). Each "dot" indicates the volume/direction of material transported out of the SWS during a given disposal cycle.

Cummulative Volume of Placed Dredged Material

Transported at Shallow Water ODMDS, after being deposited on seabed

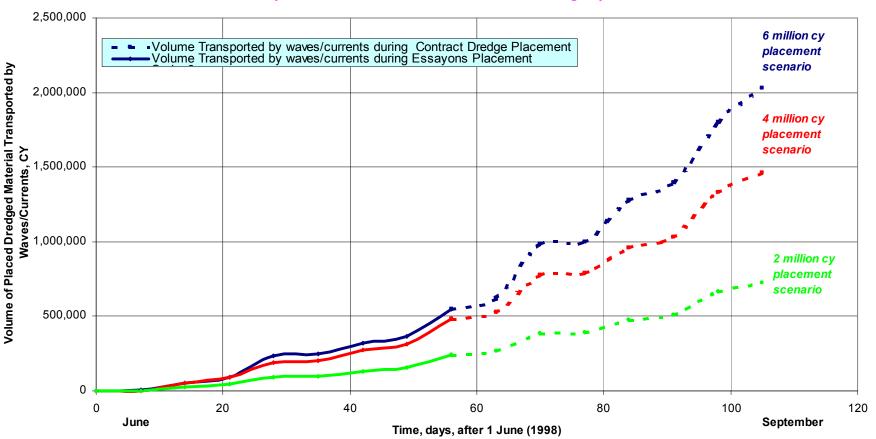


Figure F22. Cumulative volume of placed dredged material that was predicted to be transported either within (or out of) the SW ODMDS during the dredging/disposal season, after being deposited on the seabed by the hopper dredges. Estimated values shown in this figure correspond closely with observed values for SWS sediment transport, shown in Table 1.